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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,720	10/18/2005	Jacobus Hermanus Maria Neijzen	NL 030401	6095
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EXAMINER				
RAYMOND, BRITTANY L				
ART UNIT		PAPER NUMBER		
1795				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,720

Applicant(s)

NEIJZEN ET AL.

Examiner

BRITTANY RAYMOND

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-108)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 1 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Medower (U.S. Patent Publication 2003/0137065) in view of Lee (U.S. Patent Publication 2003/0235388).

Medower discloses a process of forming and using stampers for optical disk molding comprising: supplying a master disk, coating the disk with a film, coating the film with a photoresist layer to a thickness of between 20 and 120 nm, exposing the photoresist layer to a laser light source, developing the photoresist layer to form a patterned master stamper, rinsing the photoresist during the development step, forming a father stamper from the master stamper, forming a mother stamper from the father stamper, and making an optical storage disk using the mother stamper in an injection

molding process (Paragraphs 0036-0043), as recited in claims 1 and 5-8 of the present invention. Medower also discloses that the first film can be a chrome film and the photoresist can be a positive photoresist (Paragraph 0036), as recited in claim 4 of the present invention. Although Medower does not teach a drying step after the rinsing step, as recited in claim 1 of the present invention, it would be known by one of ordinary skill in the art to dry the pattern after rinsing in order for the master stamper to work properly. Medower states that the father stamper was commonly used for creating the optical storage disk in prior art (Paragraph 0043), as recited in the claims of the present invention.

Medower fails to disclose that the metallic surface comprises Ni or Au.

Lee discloses a process of placing an adhesion layer on a substrate, placing a solder layer to be patterned on the adhesion layer, placing a patterned photoresist on the solder layer, and patterning the solder layer (Paragraph 0023). Lee states that the adhesion layer is preferably made from a Ti/Ni/Au multilayer (Paragraph 0023), as recited in claim 1 of the present invention.

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have used nickel or gold as the adhesion layer of Medower, as suggested by Lee, because Lee teaches that these materials are efficient at combining substrates with layers to be patterned.

3. Claims 2, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Medower (U.S. Patent Publication 2003/0137065) in view of Lee (U.S. Patent

Publication 2003/0235388) as applied to claims 1 and 4-8 above, and further in view of Hirokane (U.S. Patent 6872511).

The teachings of Medower and Lee have been discussed in paragraph 2 above.

Medower and Lee fail to disclose that the thickness of the metallic layer is larger than approximately 10 nm, and that the photoresist wall steepness is at least 65 degrees.

Hirokane discloses a process of forming an optical disk master comprising: placing a metallic film on a substrate, placing a positive photoresist on the metallic film, laser radiating the photoresist layer, and developing the photoresist layer to form an optical disk master (Example 1-1, Column 10, Line 60 – Column 11, Line 30). Hirokane states that the metallic film is 40 nm thick (Column 10, Lines 60-65), as recited in claim 2 of the present invention. Since the same process and equivalent film thicknesses are being used in Medower and Hirokane, as that in the present invention, it would be obvious that the photoresist wall steepness would be equivalent to that of claims 9 and 10 of the present invention.

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have formed the metallic film at a thickness of 20 nm, as suggested by Hirokane, in the process of Medower and Lee because Hirokane teaches that this thickness works appropriately with the thickness of photoresist used in the process in order for the master stamper to be formed properly.

Response to Arguments

4. Applicant's arguments, filed 6/30/2008, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, due to the amendments made to the claims, a new ground(s) of rejection is made in view of a newly found prior art reference.

Applicant argues that Medower does not teach that the metallic surface comprises nickel or gold. The reference, Lee, has been added to teach that nickel and gold layers can be used as adhesion layers between substrates and layers that are to be patterned.

Additionally, while Medower and Hirokane do not state that the photolithographic process improves photoresist wall steepness and do not state the actual wall steepness of the photoresist, Medower and Hirokane do teach the same photolithographic process, adhesion thickness, photoresist thickness and substrate materials. Since Medower and Hirokane are performing the same process as the present invention, it would be obvious to one of ordinary skill in the art that it would have the same effect on the photoresist wall steepness.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRITTANY RAYMOND whose telephone number is (571)272-6545. The examiner can normally be reached on Monday through Friday, 8:30 a.m. - 5:00 p.m. EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Mark F. Huff/
Supervisory Patent Examiner, Art Unit 1795**

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